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EXAMINER	
JUNG, MIN	
ART UNIT	**PAPER NUMBER**
2663	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/716,352	Applicant(s) HAQ ET AL.	
	Examiner Min Jung	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17-19* is/are allowed.

6)☒ Claim(s) *1,2,10,11,20 and 21* is/are rejected.

7)☒ Claim(s) *3-9,12-16,22 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 21, lines 3-4, "the serving circuits" lack antecedent basis; should it be ---- the servant circuits----, instead?

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2, 10-11, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thamattoor, US Pat. No. 6,658,595 (Thamattoor, hereinafter).

Thamattoor discloses a method and system for asymmetrically maintaining system operability. Thamattoor teaches an active processing element A and redundant processing element B, as shown in Fig. 1. Thamattoor teaches that the processing elements may perform a variety of functions desired by system 10 and may include any

suitable variety of communication hardware or software network elements to transfer a variety of voice, video, data, or other information. See col. 3, lines 3-7. Thamattoor specifically uses routers as an example of the implementation of the system 10. See col. 4, lines 1-4.

Specifically, regarding claim 1, Thamattoor teaches a plurality of processing components configured to determine destination information for the packets (col. 4, lines 6-13), one of the processing components being an active processing component and the other of the plurality of processing components being non-active processing components (col. 3, lines 44-47, and col. 4, lines 55-57). Thamattoor further teaches that the routers (router cards, router blade, routing engine, or the processing element, however it is called) examiner destination addresses of the data and forward or route data over different circuits or networks based on these addresses, and further teaches that routers can also be programmed to forward data through different paths based on line availability, utilization, or other parameters (col. 4, lines 6-10). From this teaching, it is inherent that the router is configured to maintain routing tables that contain packet routing information and supply the routing tables to the processing components. Thamattoor further teaches that the non-active router receives information from the active router indicating whether the active router is functioning (col. 5, lines 4-6), and the non-active router being configured to assert itself as the active router when the non-active router fails to receive the information from the active router (col. 3, lines 60-67, col. 4, lines 37-42, and col. 6, lines 3-5). By shutting down the failed router, the now-active router assumes the functionality of the failed router. What Thamattoor fails to

specifically teach is the separately recited element of routing engines and the processing components. Thamattoor, however, teaches all the recited functions of claim 1 without separating the functions relating to processing components or to routing engines. Router typically includes a plurality of functional blocks for performing necessary routing functions. Although Thamattoor did not provide the specific teaching of employing separate processing element and routing engine, such aspect is suggested by Thamattoor at col. 3, lines 3-7, which states that the processing elements may include any suitable variety of communication hardware of software network elements to carry out the necessary functions. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to implement the teaching of Thamattoor by designing the router according to its related functions by employing separate processing blocks and routing engines in order for the router to perform most efficiently.

Regarding claim 2, the function of redundancy controller reads on the function of resetting the active routing engine when the non-active routing engine asserts itself as the active routing engine (col. 4, lines 37-42, and col. 6, lines 3-5).

Regarding claim 10, Thamattoor teaches a router comprising a first routing engine (routing function within the processing element A), and a second routing engine (routing function within the processing element B), and the function of redundancy control to reset one of the first and second routing engines and to allow the other of the first and second routing engines to become an active routing engine. See col. 3, lines 60-67, col. 4, lines 37-42, and col. 6, lines 3-7). What Thamattoor fails to specifically

teach is the usage of the term "redundancy controller circuit". Thamattoor, however, teaches all the recited functions of claim 10. Router typically includes a plurality of functional blocks for performing necessary routing functions. Although Thamattoor did not provide the specific teaching of employing separate redundancy controller for performing the resetting function, such aspect is suggested by Thamattoor at col. 3, lines 3-7, which states that the processing elements may include any suitable variety of communication hardware of software network elements to carry out the necessary functions. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to implement the teaching of Thamattoor by designing the router according to its related functions by employing a physical redundancy controller circuit to carry out the functions already taught by Thamattoor.

Regarding claim 11, Thamattoor teaches that the reset one of the routing engines enters a standby mode of operation. Thamattoor teaches that the newly active router (processing element A) resets the failed router (processing element B), and the failed router (processing element B) get repaired or replaced. See col. 6, lines 3-24. From this teaching, it is inherent that when the processing element B gets repaired or replaced, it will be available as a standby-processing element.

Regarding claim 20, Thamattoor teaches setting a first routing engine to an active state, the first routing engine performing packet forwarding while in the active state (col. 3, lines 44-47, col. 4, lines 55-57), setting the second routing engine to a standby state (col. 3, lines 44-47, col. 4, lines 55-57), the second routing engine, when in the standby state, monitoring the first routing engine for a failure in the first routing

engine (col. 4, lines 58-65), and the second routing engine assuming the active state when the second routing engine detects a failure in the first routing engine (col. 4, lines 37-42). What Thamattoor fails to specifically teach is the usage of the term "packet forwarding engine". Thamattoor, however, teaches all the recited functions of claim 20. The packet forwarding function is specifically taught at col. 4, lines 1-13. Router typically includes a plurality of functional blocks for performing necessary routing functions. Although Thamattoor did not provide the specific teaching of employing separate forwarding engine for communicating with the routing engine, such aspect is suggested by Thamattoor at col. 3, lines 3-7, which states that the processing elements may include any suitable variety of communication hardware of software network elements to carry out the necessary functions. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to implement the teaching of Thamattoor by designing the router according to its related functions by employing a forwarding engine to carry out the functions already taught by Thamattoor.

Allowable Subject Matter

5. Claims 17-19 are allowed.

6. Claims 3-9, 12-16, 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claim 21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Li et al. Patent, the Bhaskaran patent, the Baskey et al. patent, the Smith et al. patent, the Sheu patent, the Otani et al. patent, and the Fukushima et al. patent are cited for further references.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Min Jung whose telephone number is 703-305-4363. The examiner can normally be reached on Monday-Friday, 7AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 703-308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ
February 23, 2004

Min Jung
Primary Examiner